## ABSTRACT

**Title:** Effect of exteroceptive stimulation on muscle tone after physical activity

**Aims:** The aim of this diploma thesis is to summarize theoretical findings regarding the muscle tonus, biomechanical characteristics of soft tissues and the influence of exteroceptive stimulation on muscle tonus. In practical part, the influence of exteroceptive stimulation on muscle tonus after anaerobic exercise was evaluated using the measuring instrument – myotometer.

**Methods:** Diploma thesis was approached as pilot and was processed at FTVS-UK in the form of analytical-comparative study on the group of six probands who experienced endurance Wingate test and then they underwent the exteroceptive stimulation technique. The main objective of this experiment was the evaluation of effect of stroking – the exteroceptive stimulation on muscle tonus. The muscle tonus was measured before the exertion, after anaerobic exertion, after passive rest and after exteroceptive stimulation. Measuring of muscle tonus of m. soleus was performed in FTVS-UK laboratory using myotonometer. The data were displayed through analog-digital convertor and were subsequently processed in program Matlab.

**Outcomes:** Experiment partly proved mutual relationship between skin and muscle and possibility of influencing the muscle using the exteroceptive stimulation. Relationship was proved only partially because lowering the muscle tonus after exteroceptive stimulation via stroking was not proved in all study subjects. Furthermore, we pointed out that after short term anaerobic exercise muscle tonus does not always have to increase in burdened muscles.



**Key words:** exteroceptive stimulation, muscle tonus, myotonometr, wingate test